

4. Write each expression as a product of powers.

- a) $(6 \times 4)^3$ b) $(2 \times 5)^4$ c) $[(-2) \times 3]^5$
 d) $(25 \times 4)^2$ e) $(11 \times 3)^1$ f) $[(-3) \times (-2)]^3$

6. Write as a power.

- a) $(3^2)^4$ b) $(6^3)^3$ c) $(5^3)^1$
 d) $(7^0)^6$ e) $-(8^2)^2$ f) $[(-3)^4]^2$

11. Why is the value of $[(-2)^3]^4$ positive but the value of $[(-2)^3]^5$ is negative?

Do: a, c, e, h for Question 14

14. Simplify, then evaluate. Show your work.

- a) $(3^2 \times 3^1)^2$ b) $(4^6 \div 4^4)^2$
 c) $[(-2)^0 \times (-2)^3]^2$ d) $(10^6 \div 10^4)^3$
 e) $(10^3)^2 \times (10^2)^3$ f) $(12^2)^4 \div (12^3)^2$
 g) $(5^2)^6 \div (5^3)^4$ h) $[(-2)^2]^3 \times (-2)^3$

Skip a, f for Question 19

19. Simplify, then evaluate each expression.

- a) $(2^3 \times 2^6)^2 - (3^7 \div 3^5)^4$
 b) $(6 \times 8)^5 + (5^3)^2$
 c) $[(-4)^3 \times (-4)^2]^2 + (4^3 \times 4^2)^2$
 d) $[(-2)^4]^3 + [(-4)^3]^2 - [(-3)^2]^4$
 e) $[(-3)^4]^2 \times [(-4)^0]^2 - [(-3)^3]^0$
 f) $[(-5) \times (-4)]^3 + [(-6)^3]^2$
 $- [(-3)^9 \div (-3)^8]^5$

20. a) Write 81:

- i) as a power of 9
 ii) as a power of a product
 iii) as a power of 3

b) Write 64:

- i) as a power of 8
 ii) as a power of a product
 iii) as a power of 2

c) Find other numbers for which you can follow steps similar to those in parts a and b.